

REMARKS

Favorable reconsideration of this application, in light of the present amendments and following discussion, is respectfully requested.

Claims 1-6 and 8-20 are pending. Claims 1, 4, 5, 8, 11, 12, 14, 19 and 20 are amended.

To better define Applicants' invention, independent claims 1 and 8 have been amended to recite that each of the compositions claimed "contains no lithium oxide other than trace impurities." Specification support for the amendments to independent claims 1 and 8 can be found at least in original claim 1; at page 3, lines 12-13 and page 6, lines 5-7. Independent claim 14 has been amended to clarify that the glass yarn has a particular specific Young's Modulus, a property referred to throughout the specification. Claims 4, 5, 11, 12, 14, 19 and 20 have been amended to remove the optional narrow claim language. Claim 7 was canceled previously. No new matter is added.

Applicants submit that this Amendment After-Final places this application in better form for appeal as it clarifies the lithium oxide content of the present invention. Applicant believes that this Amendment requires only a cursory review because the claim amendments presented herein do not add any new features and/or do not significantly alter the scope of the claims. Therefore, it is respectfully submitted that the amended claims should not require any further search by the Examiner.

This Amendment is necessary as it clarifies and/or narrows the issues for consideration by the Board and was not earlier presented because Applicants believed that the Amendment dated 17 October 2008 placed this application in condition for allowance, for at least the reasons set forth in that response. Accordingly, entry of the present Amendment, as an earnest attempt to advance prosecution and/or to reduce the number of issues, is requested under 37 C.F.R. §1.116.

Rejections under 35 U.S.C. § 112, first and second paragraphs

Items 1-3, on Page 2 of the outstanding Office Action, reject to claims 1-6 and 8-13 under 35 U.S.C. § 1.12, first and second paragraphs, objecting to the recitation "substantially free of lithium." To better define Applicants' invention, independent claims 1 and 8 have been amended to recite that each of the compositions claimed "contains no lithium oxide other than trace impurities."

Applicants submit that the claim language of amended independent claims 1 and 8 particularly points out and distinctly claims the subject matter which applicant regards as the invention. Further, Applicants submit that the claimed subject matter was described in the specification in such a way to reasonably convey to one skilled in the art how to make and use the same.

Item 4, on Page 2 of the outstanding Office Action, objects to claims 4, 5, 11, 12, and 19-20. In response to the Examiner's objection, Applicants have amended Claims 4, 5, 11, 12, 19 and 20 to clarify the scope of the claims and to remove the optional narrow claim language.

Rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103

In Item 6, spanning Pages 3 and 4 of the outstanding Office Action, the Examiner rejects claims 1-6 and 8-13, under 35 U.S.C. § 102(b) in view of U.S. Patent No. 4,199,364 to Neely (henceforth, "Neely").

Applicants respectfully traverse this rejection for the reasons set forth below.

Applicants respectfully submit that amended Claims 1 and 8 define an invention that is neither taught nor suggested by Neely. Applicants note that independent Claims 1 and 8 have been amended to recite the limitation that the composition advantageously "contains no lithium oxide other than trace impurities." As noted in Applicants' disclosure, lithium oxide is expensive, and has a negative impact on the hydrolytic resistance of the glass (column 5, lines 6-8.)

In total contrast, the composition taught by Neely requires the presence of lithium oxide. Neely clearly states that "lithium oxide is always present." (see column 4, line 18-19; column 4, line 68 to column 5, line 1; and column 5, line 7)

Neely discloses a glass composition including intentional additions of lithium oxide well in excess of that which would be included as an impurity (see for example the Abstract; column 3, lines 55-63; and column 5, lines 34-37).

SiO ₂	55-61
Al ₂ O ₃	12-18
MgO	4-10
CaO	14-18
Na ₂ O	0.1-1.5
Li ₂ O	0.1-1.5
BaO	0.0-1.0

Neely uses lithium as a flux, which decreases the glass viscosity, and lowers the softening point.

Neely nowhere teaches or suggests a glass yarn or composition that "contains no lithium oxide other than trace impurities" as taught and claimed by the Applicants. In view of the above, Applicants submit that claims 1 and 8 are not anticipated by, or obvious in view of Neely. Applicants respectfully submit that claims 1 and 8 are in condition for allowance, and that claims 2-6 and claims 9-13 dependent thereon are also in condition for allowance for at least those reasons.

In Item 7, spanning Pages 3 and 4 of the outstanding office action, the Examiner rejects claims 14-20 under 35 U.S.C. § 102(b), or in the alternative under 35 U.S.C. § 103(a), as either anticipated or obvious in view of Neely. The Examiner concedes that Neely does not disclose the claimed Young's Modulus or T log=4. The Examiner asserts that Neely discloses a glass composition and yarn having the same components present in the same amounts, and concludes it is reasonable to expect that the material of Neely would possess the claimed properties.

Applicant respectfully traverses this rejection for the following reasons.

Neely teaches a boron free glass composition similar to "E" glass compositions in properties (see column 3, lines 33-36). Moreover, Neely specifically teaches "[t]he meaning of the phrase "similar properties" refers to glass properties that are not more than about a 5 percent variation from those glass properties for "E" and/or "621" glass compositions" (see column 4, lines 3-6). As noted in Applicants' disclosure, E-glass has a specific Young's modulus of around 33 MPa.kg.sup.-1.m.sup.3, which is insufficient for use as a reinforcement for large components operating under dynamic conditions and high mechanical stresses (see page 2, lines 12-13 and page 1, lines 20-23).

In contrast, as noted in Applicants' disclosure, the specific Young's modulus of the compositions according to Applicants' invention is substantially higher than that of E-glass (see page 7, lines 4-5 and Table 1). The glass yarns according to the invention are also less expensive than the R-glass yarns, and can advantageously replace R-glass in certain applications, especially aeronautical applications, or for the reinforcement of helicopter blades, or for optical cables (see page 7, lines 10-13). Applicants therefore submit that claims 14-20 are also in condition for allowance.

In Item 9, spanning Pages 5 and 6, the Examiner provisionally rejects claims 1-6 and 8-20 under the judicially created doctrine of obviousness-type double patenting in view of co-pending U.S. Patent Application Serial No. 11/722,039.

In response to this rejection, Applicants note that U.S. Patent Application Serial No. 11/722,039 is the national stage entry (371) of PCT/FR05/51090 filed on December 15, 2005. The instant application is the national stage entry (371) of PCT/FR04/01431 filed on June 9, 2004, and pre-dates Application Serial No. 11/722,039. Applicants therefore submit that Application No. 11/722,039 is not a valid reference as to the instant application, and respectfully request that the Examiner withdraw this rejection.

In Item 10, on Page 6, the Examiner rejects Claims 1-6 and 8-20, on the grounds of non-statutory obviousness-type double patenting over claims 1 and

12-15 of co-pending and allowed Application No. 10/129,265 (henceforth "the '265 Application") in view of U.S. Patent Application No. 2001/0011058 to Tamura (henceforth, "the Tamura Publication"). The Examiner asserts the '265 Application claims a composition which has overlapping ranges of the same constituents, although the Examiner concedes that the '265 Application claims 0-5% MgO while the instant application claims 6-12%. The Examiner asserts the Tamura Publication teaches that in forming glass compositions for making glass fibers it is known to employ MgO in amounts of 1-9%. The Examiner goes on to assert the Tamura Publication teaches that the MgO decreases the viscosity of the glass and improves the meltability of the glass. The Examiner concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the amount of MgO from within the ranges taught by Tamura in order to arrive at a composition having the desired properties including meltability and viscosity.

In response to this rejection, Applicants note that claim 1, from which claims 12-15 of the '265 Application depend, recites CaO in amounts of 17-25%, while the instant application claims 13-14.9%. Applicants therefore submit that the '265 Application fails to teach or suggest not only the amounts of MgO claimed, but also the amounts of CaO claimed in independent claims 1, 8 and 14. Applicants further submit that the Tamura Publication teaches CaO in amounts of 16-27% (see the Abstract and paragraphs 8-10 and 23), and so cannot make up for the deficiencies of the '265 Application in this regard. Indeed, Tamura specifically states "[w]hen the [CaO] content thereof in the glass fiber before modification is less than 16% by weight, the glass has too high a melting temperature" (see paragraph 13). Applicants therefore submit that the Tamura Publication teaches away from Applicants' invention as recited in independent claims 1, 8 and 14.

In addition, Applicants note that claim 1 of the '265 Application claims a ratio of Al₂O₃/CaO that is less than 0.7. In contrast, independent claims 1, 8 and 14 of the instant application claim Al₂O₃ in the amount of 12-20% and CaO in the amount of 13-14.9%, which results in a ratio of Al₂O₃/CaO of at least 0.8.

Furthermore, Applicants submit that the '265 Application and the Tamura Publication are silent as to mechanical properties of any kind, let alone a glass yarn having a specific Young's Modulus greater than 33, as recited in amended independent claim 14. Applicants therefore submit that independent claim 14 is in condition for allowance in its own right.

In view of the above, Applicants submit independent claims 1, 8 and 14 are in condition for allowance, and that claims 2-6, 9-13 and 15-20 dependent thereon are also in condition for allowance for at least those reasons.

CONCLUSION

In light of the above Amendments and Remarks, Applicants believe that this application is now in condition for allowance and therefore request favorable consideration.

If any points remain in issue, which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Kathryn W. Grant
Kathryn W. Grant
Registration No. 33,238

Owens Corning
Patent Department, Bldg. 21-0
2790 Columbus Road
Granville, Ohio 43023
(740) 321-7213